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ABSTRACT

This summary report evaluates the 1983-84 Portland Public Schools Chapter 1 program in terms of achievement gains on the Comprehensive Tests of Basic Skills and the Portland Achievement Test. The Chapter 1 project included three public high schools, 50 public elementary schools, and 14 nonpublic elementary schools. At any given time, about 7,000 students were receiving supplementary support in reading or math basic skills. Three types of programs were implemented: (1) the Prescription Learning System; (2) Help One Student To Succeed (HOSTS) and (3) individual school developed programs. Overall 1983-84 achievement gains for Chapter 1 students showed satisfactory progress, but varied widely among schools and grades. Four special studies of Chapter 1 programs were completed in 1983-84. The examination of test scores of students enrolled in Chapter 1 at different periods over three successive years showed that student enrollment histories must be considered when evaluating sustained gains. Two studies, investigating the effects of the two exemplary programs, found that neither was noticeably better than the traditional Chapter 1 programs at producing achievement gains. The fourth study also supports the contention that additional student experience variables must be considered when evaluating a school's Chapter 1 program effects on student achievement. (Author/BS)

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1983-84 EVALUATION REPORT

ECIA, CHAPTER 1
Disadvantaged Child Project

IN THE PORTLAND PUBLIC SCHOOLS

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December, 1984

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ECIA, CHAPTER I
DISADVANTAGED CHILD PROJECT
YEAR-END EVALUATION REPORT

1983-84

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Research and Evaluation Department
Portland Public Schools
Portland, Oregon

ECIA, Chapter I
Administrative Summary

In previous years, Portland Public Schools had two or three Title I or Chapter I projects, one in each administrative area. In 1983-84, administration was centralized, and Chapter I followed by combining all of its qualifying schools into one project. The 1983-84 project included 3 public high schools, 50 public elementary schools, and 14 nonpublic elementary schools. At any given time, about 7,000 students were receiving supplementary support in basic skills, mainly reading or math, in the 67 schools. The total budget is about $3.5 million.

To a large extent, the Portland project consisted of 67 quite unique projects, even though over half of them used commercial systems either as part or all of their Chapter I program. Among the public schools, there were 14 schools that used the Prescription Learning System, 22 that used HOSTS, and 18 that used systems of their own design or largely unique systems. Non public schools with their small enrollments of Chapter I students also designed their own programs.

Due to the student needs and high mobility, Chapter I instruction is highly individualized or in small groups. The average stability index of 71.6 percent for the 50 Chapter I public elementary and middle schools was nearly 12 percent lower than the average among the 32 non-Chapter I schools. Indices for all non-Chapter I schools were higher than the average of the Chapter I schools. Turnover among Chapter I students each year is about 30 percent to 35 percent.

The 1983-84 achievement test results for public school Chapter I students in Grades 3 to 8 in reading and math showed overall gains that were slightly larger than those of the total District. Wide variations in gains were observed among schools and grades. Average gains for about 80 percent of the Chapter I schools were larger than District averages. Achievement records for the last six years showed that, across the grades, the gains of Chapter I students for 1983-84 were nearly all larger than those of project students in previous years. Achievement data for Chapter I students in the other grades and in the nonpublic schools were collected using different strategies and different instruments; however, the results for 1983-84 appeared quite satisfactory.

Four special studies of Chapter I programs were completed in 1983-84. One study examined the test scores of students enrolled in Chapter I at different periods over three successive years. The results showed that larger gains were associated with periods of enrollment in Chapter I and that students enrolled for at least two successive years maintained their gain the third year quite well, whether or not they were enrolled in Chapter I the final year. They maintained their gains much better than students enrolled for only one year. The study showed quite definitely that the histories of students with regard to enrollment in Chapter I must be considered in evaluating sustained gains.

In the other three studies, two involved exemplary programs, and the third involved several selected program variables. The exemplary programs were HOSTS and Prescription Learning. A general finding was that the achievement gains of students in the exemplary programs and in the other Chapter I programs as well were slightly larger than the average of the District. Results for the last two years show that neither of the exemplary programs stood out as being noticeably better at producing gains than the more traditional Chapter I programs designed by individual schools. The larger or smaller gains of individual schools appeared to be related to conditions other than the instructional systems as they were identified here.

A study which to some extent replicated an earlier study involving a number of program variables and conditions (e.g., instructional setting, use of computers, instructional time) also failed to produce supportable findings that were consistent with those from the earlier study. In fact, the results from these last three studies support the contention that student experiences in addition to Chapter I experiences (e.g., their schedules, instruction in regular classrooms) must be considered in evaluating the effects of a school's Chapter I program on student achievement.

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1. INTRODUCTION

For many years, the administration of Portland Public Schools was by Areas, and each Area had a Title I, and later a Chapter I, project. Beginning with the 1983-84 school year, the District was reorganized into instructional clusters consisting of high schools and their elementary and middle feeder schools. Overall administration was centralized, and with this reorganization, all Chapter I schools were combined into one Chapter I project.

The PPS Chapter I project for 1983-84 included three public high schools, fifty public elementary and middle schools, and fourteen nonpublic elementary schools. The nonpublic Chapter I schools are located within the geographic areas served by Chapter I public schools and serve only those qualifying students who reside within the Chapter I public school service area. At any given time, about 7,000 students were being served by the 67 Chapter I schools. All but one high school and two public elementary schools had Chapter I programs for both reading and math. Using the students in Grades 3 to 12 where reading and math are taught as more discrete subjects, each year about 30 to 35 percent of the students are enrolled in reading only, about 20 to 25 percent in math only, and the remaining 45 percent are enrolled in both subjects.

This evaluation report contains information for all 67 Chapter I schools and is organized according to the following sections:

1. Introduction
2. Program Descriptions and Program Variables
3. Summary of Achievement Test Results
   a. Public and Nonpublic School Chapter I Students -- Grades 1 and 2
   b. Public School Chapter I Students -- Grades 3 to 8 and 9 to 12
   c. Nonpublic School Chapter I Students -- Grades 4 to 8
4. Conclusions from Special Chapter I Studies
5. Summary and Comments
6. Individual School Data for Grade 1 and State Chapter I Reporting Forms

2. PROGRAM DESCRIPTIONS AND VARIABLES

In previous years, narrative descriptions of Chapter I programs in each school were prepared and included in the year-end reports. While these descriptions provided information on the nature of the programs in each school, this information was not organized and in the appropriate form to be useful for evaluation purposes. By treating the information for selected variables used to describe programs in a certain way and by the computerization of student data to facilitate analyses, it is now possible to explore the relationship or program variables to student achievement scores.

In Table 1, the variables are identified and described, and the coding for them in terms of percents, actual counts, or category number for computer analysis is indicated. These variables were selected to explore their possible relationship with student achievement. During the 1984-85 school year, evaluators will be observing these variables in programs, trying to improve upon them, and will be alert for possible new ones. Figure 1 shows the characteristics of school programs according to the selected variables. For most variables, there were sufficient variations among schools to indicate the uniqueness among them and the complexity of the Portland Chapter I project. To a large extent the Portland project consists of 67 quite independent projects. Among the public school programs there were 13 elementary schools and one high school that implemented the Prescription Learning Program, 22 implemented HOSTS (three had both Prescription Learning and HOSTS) and the remaining 18 were programs designed by the schools or largely unique instructional systems. Most commercial programs are quite expensive and not well adapted to small enrollments, so the private schools, all of which have small Chapter I enrollments, design their own program.

Most Chapter I programs were pull-out where students were taken out of regular non-basic skills classes and received supplementary instruction in separate classrooms or laboratories. This instruction of 30 to 40 minutes per day was usually highly individualized or small groups and presented by teachers, aides, or usually both. The curriculum was usually coordinated with the regular classroom curriculum either through the work between teachers matching with curricular or achievement test goals, or both. Difficulty in appropriately matching instruction with student achievement is compounded by the mobility of Chapter I students. Taking only students enrolled at the beginning of the school year and calculating the percent of those students who completed the year at the same school, a stability index was determined for each school. The stability indices for the schools ranged from a low of 43.8 percent to a high of 89.4 percent. The average of the 50 public elementary and middle schools was 71.6 percent; the average among the 32 non-Chapter I schools was 83.9 percent. The indices for the non-Chapter I schools were all higher than the average of the Chapter I schools, indicating the higher mobility of the latter group. More information on the nature of Chapter I programs will be presented later when a summary of the findings in a special study will be presented.

TABLE 1
CHAPTER I SUMMARY SHEET CODING
1983-84

1. Percent of Staff Budget Spent on Aides and Teachers: Refers to the percent of money allocated to personnel which is spent on teachers and aides.

   * 3 characters; 000 to 100

2. Percent of Students in School Receiving Chapter I Services in Reading and Math.

   * 2 characters; 00 to 99

3. Percent of Capacity of Program Enrolled in Chapter I: Duplicated and Unduplicated: This refers to the extent to which the program is at capacity. Capacity is defined as the maximum number of students a program is allowed to serve which is determined by dividing the school's Chapter I budget by 360. Unduplicated refers to a single headcount, while duplicated count refers to the sum of the number of students in reading and math.

   * 3 characters; 000 to 999

4. Capacity: Refers to whether staff felt program was at capacity.

   * 1 character; 1 to 3

     1=Over; 2=Under; 3=At

5. Mobility: Refers to mobility of students in the school as expressed in percentage of students enrolled at the beginning of the year who were also enrolled at the end of the year in the same school. This does not include students who were enrolled after the beginning of the school year.

   * 2 characters; 00 to 99

6. Type of Program: As defined by State guidelines.

   * 1 character; 1 to 7

   1=In-class; 2=Pull-out; 3=Laboratory; 4=Regular classroom and Pull-out; 5=Regular classroom and Laboratory; 6=Pull-out and Laboratory; 7=Other. (See Form 6 for explanation of Program Codes.)

7. Instructional Minutes Per Week: The number of minutes students receive Chapter I or Chapter I assisted instruction.

   * 3 characters; 000 to 999

TABLE 1 (cont.)
CHAPTER I SUMMARY SHEET CODING
1983-84

8. Instructional Materials Used in Chapter I Program: Refers to the predominate type of instructional material(s) used in the Chapter I program.

   * 1 character; 1 to 5

   1=One text; 2=Several texts; 3=Teacher-made materials; 4=Combination of texts and/or Teacher-made materials; 5=Structured commercial program (e.g., HOSTS).

9. Correlated: Identifies if the Chapter I program is correlated with regular classroom instruction.

   * 1 character

   1=Yes; 2=No

10. PALT Goals: Identifies if the Chapter I program uses the information provided from PALT goal reports for instructional planning.

    * 1 character

    1=Yes; 2=No

11. Conference: Identifies if the Chapter I teacher conferences with the regular classroom teacher about individual student performance.

    * 1 character

    1=Yes; 2=No

12. Computer Manage/Instruct.: Identifies if computers are used for either management, instruction, or both, or not at all.

    * 1 character

    1=Yes; 2=No

Figure 1

Characteristics of Chapter I School Programs

1983-84

School	N	Percent of Staff Budget Spent on: Aides	Teacher	Percent of Students Receiving Chapter I: Read	Math	Percent of No. of Students Enrolled/ Capacity: Undup.	dup.	Capacity	Mobility	READING: Type of Program 3-5	6-8	Instr. Minutes Per Wk. 3-5	6-8	Instr. Materls. 3-5	6-8	Correlated	PALT Goals	Conference	Computer Manage/ Instruct. 3-5	6-8	MATH: Type of Program 3-5	6-8	Instr. Minutes Per Wk. 3-5	6-8	Instr. Materls. 3-5	6-8	Correlated	PALT Goals	Conference	Computer Manage/ Instruct. 3-5	6-8
Abernethy	375	038	062	13	08	065	074	3	8%	2		120		5		1	2	1	1		3		075		5		2	2	1	1	
Applegate	240	000	100	34	34	080	133	3	77.4	3		75		5		1	1	1	1		3		075		5		1	1	1	1	
Arleta	400	023	077	18	07	058	065	3	47.0	2		150		4		2	1	1	2		2		120		4		2	2	1	2	
Ball	210	1?;;	000	49	45	056	093	3	44.0	1		90		1		1	2	1	2		1		150		1		1	2	1	2	
Beach	58[illegible]	022	078	23	21	044	079	3	59.4	3[illegible]		90-120		5		1	1	1	1		3[illegible]		90-120		5		1	1	1	1	
Boise	140	000	100	40	64	126	252	3	28.6	5		100		5		1	1	1	1		5		240		5		1	1	1	1	
Brooklyn	140	100	000	20	16	060	108	2	52.5	2		150		4		1	1	1	2		2		150		4		1	1	1	2	
Buckman	400	035	065	30	24	064	113	2	43.8	3	3	140	140	5	5	1	2	1	1	1	3	3	140	140	5	5	1	2	1	1	1
Chapman	350	087	013	14	22	068	093	3	42.9	2		150		5		1	1	1	2		2		150		4		1	1	1	2	
Chief Jos.	350	009	091	18	10	051	067	3	23.5	2		150		4		1	1	1	1		3		075		4		1	1	1	1	
Clarendon	425	000	100	24	09	066	081	3	43.2	3		90		5		1	1	1	1		3		60/90		5		1	1	1	1	
Creston	370	015	085	19	20	097	144	3	21.7	2		120		3/5		1	1	1	1		2		040		4		1	2	2	1	
Eliot	604	016	084	12	03	070	070	3	9?.4	2		150		4		1	1	1	2		1		150		4		1	1	1	2	
Faubion	935	038	062	27	14	066	079	3	21.0	2		150		4/5		1	1	1	2		2		120		1		1	1	1	2	
George	525	049	051	21	12	048	065	3	41.1	3	3	120-300	120-200	5		1	1	1	1	1	3	3	120	120	5	5	1	1	1	1	1

Figure 1

Characteristics of Chapter 1 School Programs

1983-84

School		Percent of Staff Budget Spent on		Percent of Students Receiving Chapter 1		Percent of No. of Students Enrolled/ Capacity		Capacity	Mobility	READING									MATH											
										Type of Program		Instr. Minutes Per Wk.		Instr. Materls.		Correlated	PALT Goals	Conference	Computer Manage/ Instruct.		Type of Program		Instr. Minutes Per Wk.		Instr. Materls.		Correlated	PALT Goals	Conference	Computer Manage/ Instruct.	
	N	Aides	Teacher	Read	Math	Undup.	dup.			3-5	6-8	3-5	6-8	3-5	6-8				3-5	6-8	3-5	6-8	3-5	6-8	3-5	6-8				3-5	6-8
Glenhaven	235	021	079	29	41	092	122	3	91.7	1	1	520	520	1	1	1	1	1	2	2	1	1	530	530	1	1	1	1	1	2	2
Gregory Hts.	550	096	004	09	11	123	184	3	87.2		1		300		4	1	1	1		2		1		300		4	1	1	1		2
Grout	350	017	083	25	01	079	087	3	92.1	2		120		5		2	1	1	1												
Hosford	675	097	003	13	19	089	126	3	75.4		1		240		4	1	1	1		2		1		240		4	1	2	1		2
Humboldt	515	059	041	20	10	050	062	3	88.1	3 or 4		200		4 or 5		1	1	1	1		3 or 4		200		5		1	1	1	1	
Irvington	400	020	080	20	00	051	050	3	95.6	2		300		5		1	1	1	2												
James John	500	023	072	09	08	035	046	3	71.3	6	5	180	180	5	5	1	1	1	1	1	5	5	200	200	5	5	1	1	1	1	1
Kellogg	650	024	076	14	11	043	079	3	89.6		3		180		5	1	1	1		1		3		150		5	1	1	1		1
Kelly	600	039	052	32	11	096	121	3	68.4	1	1	300	150	1	1	1	2	1	2	2	2	2	120	120	2	2	1	2	1	1	1
Kenton	100	024	076	29	30	055	077	3	78.4	6		120		5		1	1	1	1		6		100		4		1	1	1	1	
King	429	033	067	15	16	024	047	3	92.0	6		120		5		1	1	1	1		6		100		5		1	1	1	1	
Lane	400	048	052	20	26	107	131	3	76.1	1	1	240	240	4	4	1	1	1	2	2	1	1	240	240	4	4	1	2	1	2	2
Lent	400	047	053	24	25	085	113	3	47.3	2	2	120	120	5	5	1	2	1	1	1	2	2	120	120	1	1	1	1	1	2	2
Marysville	360	016	084	33	13	108	148	1	72.0	2	2	120	120	3/5	3/5	1	1	1	1	1	2	2	120	120	4	4	1	1	1	2	2
Meek	310	051	049	23	05	082	108	3	68.0	3		150		5		2	2	2	1		2		150		2		1	1	1	1	

Figure 1

Characteristics of Chapter I School Programs

1983-84

School	N	Percent of Staff Budget Spent on: Aides	Teacher	Percent of Students Receiving Chapter I: Read	Math	Percent of No. of Students Enrolled/ Capacity: Undup.	dup.	Capacity	Mobility	READING: Type of Program 3-5	6-8	Instr. Minutes Per Wk. 3-5	6-8	Instr. Materls. 3-5	6-8	Correlated	PALT Goals	Conference	Computer Manage/ Instruct. 3-5	6-8	MATH: Type of Program 3-5	6-8	Instr. Minutes Per Wk. 3-5	6-8	Instr. Materls. 3-5	6-8	Correlated	PALT Goals	Conference	Computer Manage/ Instruct. 3-5	6-8
Ockley Green	675	040	060	14	16	041	065	3	725		3		80-140		5	2	2	2		1		3		80-200		5	2	2	2		1
Peninsula	400	021	079	19	07	037	048	3	724	3	3	150-200	150-200	5		1	1	1		1		5		215		1	1	1	1			1
Portsmouth	400	077	023	26	12	061	088	3	664	6	6	200	200	5	5	1	1	1	1	1	6	6	200	200	5	5	1	1	1		1
Rice	160	058	042	37	22	073	115	3	779	2		120		5		2	1	1	1		1		100		4		1	1	1	2	
Richmond	200	040	060	30	27	084	144	3	750	2		120		5		1	2	1	1		2		120		5		1	2	1	1	
Riese	120	000	100	13	07	042	044	3	826	6		120		5		1	1	1	1		6		135		5		1	1	1	1	
Rigler	450	030	070	16	20	087	105	3	724	1		150		1		1	2	1	1		1		150		4		1	2	1	1	
Sabin	502	012	078	12	09	063	078	3	758	5		120		5		1	1	1	1		3		150		4		1	1	!	!	
Scott	450	024	076	10	01	056	058	3	713	2		120		5		1	2	1	1												
Sellwood	520	026	074	09	17	078	088	3	727	3	3	185	185	5		2	2	1	1	1	3	3	185	185	5	5	2	2	1	1	1
Sitton	470	048	052	12	10	049	075	3	638	6	5	60/120	120	5		1	1	1	1	1	6	5	090	100	5	5	1	1	1	1	1
Sunnyside	300	026	074	29	10	092	100	1	450	2		150		4		2	1	1	2		2		075		4		1	2	1	2	
Tubman	525	000	100	15	16	047	063	3	825		5		215	200/5		1	1	1		1		5		215		1	1	1	1		1
Vernon	580	028	072	27	11	063	072	3	644	3		90-150		5		1	1	1	1		3		90-150		5		1	1	1	1	
Vestal	310	008	092	11	15	051	069	2	580	2	2	120	120	5	5	2	2	1	1	1	2	2	120	120	2	2	1	1	1	1	1

Figure 1

Characteristics of Chapter 1 School Programs

1983-84

School	N	Percent of Staff Budget Spent on Aides	Percent of Staff Budget Spent on Teacher	Percent of Students Receiving Chapter 1 Read	Percent of Students Receiving Chapter 1 Math	Percent of No. of Students Enrolled/ Capacity Undup.	Percent of No. of Students Enrolled/ Capacity dup.	Capacity	Mobility	READING Type of Program 3-5	READING Type of Program 6-8	READING Instr. Minutes Per Wk. 3-5	READING Instr. Minutes Per Wk. 6-8	READING Instr. Materls. 3-5	READING Instr. Materls. 6-8	READING Correlated	READING PALT Goals	READING Conference	READING Computer Manage/ Instruct. 3-5	READING Computer Manage/ Instruct. 6-8	MATH Type of Program 3-5	MATH Type of Program 6-8	MATH Instr. Minutes Per Wk. 3-5	MATH Instr. Minutes Per Wk. 6-8	MATH Instr. Materls. 3-5	MATH Instr. Materls. 6-8	MATH Correlated	MATH PALT Goals	MATH Conference	MATH Computer Manage/ Instruct. 3-5	MATH Computer Manage/ Instruct. 6-8
Whitaker	400	039	043	23	36	070	110	1	100		2/3		225/150		4/5	1	2	1		1		2/3		684/150		4/5	1	1	1		1
Whitman	430	060	040	24	08	080	096	3	136	1	1	225	225	1	1	1	1	1	2	2		1		075		1	1	1	1	2	
Wilcox	135	100	000	34	24	090	130	3	134	1		200		4		1	1	1	2		1		200		4		1	1	1	2	
Woodlawn	500	026	074	16	16	042	071	3	229	1		150		4		1	1	1	1		6		90		4		1	1	1	1	
Woodmere	190	028	072	29	27	089	127	3	128	2		200		5		1	1	1	1		2		175		2		1	1	1	1	

Figure 1

Characteristics of Chapter I School Programs

1983-84

School	N	Percent of Staff Budget Spent on [1]		Percent of Students Receiving Chapter I		Percent of No. of Students Enrolled/ Capacity		Capacity	Mobility	READING							MATH								
										Type of Program	Instr. Minutes Per Wk.	Instr. Materls.	Correlated	PALT Goals	Conference	Computer Manage/ Instruct.	Type of Program	Instr. Minutes Per Wk.	Instr. Materls.	Correlated	PALT Goals	Conference	Computer Manage. Instruct.
		Aides	Teacher	Read	Math	Undup.	dup.			9-12	9-12	9-12				9-12	9-12	9-12	9-12				9-12
Grant	172	040	024	07	07	063	070	3	775	7	230	5	-	/	-	/	7	230	4	-	/	-	/
Jefferson	427	006	079	16	12	061	069	3	735	7	235	5	-	/	-	/	7	235	5	-	/	-	/
Roosevelt	142	000	086	20	0	090	NA	/	628	7	250	4	-	/	-	2							

[1] Remaining percent to total 100 spent on Community Agent, Clerical, or both.

Chapter I programs in nonpublic schools tend to be small with an average of about 25 students in each school -- the minimum to qualify for funding is 10. Instruction is largely small groups where a few students at a time meet with a teacher for about one class period each day for reading and/or math. The sessions are much like tutoring on an individual basis where instructional materials address individual need areas. Much of the material is teacher made or material produced in the school. Because the number of students in each grade is small, cross-grade grouping is common.

Overall, Portland Chapter I is an amalgam of a number of educational systems and practices, and to a large extent, each is unique. Even schools implementing programs identified by specific names are quite unique, especially when the total context of the Chapter I program is considered. These uniquenesses, it seems to us, have made it necessary to consider total school programs in studying the effects of Chapter I programs.

3. SUMMARY OF ACHIEVEMENT TEST RESULTS

Achievement information for each of the 67 Chapter I public and nonpublic schools is shown in the last section of this report: Individual School Data for Grade 1 and State Chapter I Reporting Forms. Section 3., Summary of Achievement Test Results, is a summary of the achievement test data for the Portland Public Schools Chapter I project as follows:

3.a Public School Chapter I Students, Grades 1 and 2;

3.b Public School Chapter I Students, Grades 3 through 8 and 9 through 12; and

3.c Nonpublic School Chapter I Students, Grades 1 and 2 and 4 through 8 (grade 3 students are not included due to the nature of the testing schedule and the test being used for evaluation).

Achievement scores for grades 1 and 2 in which a nationally standardized test was used are expressed in terms of Normal Curve Equivalents (NCE) and other traditional scores of expanded scale scores and percentiles. The NCE scale is an equal interval, standard score scale transformed to match the percentile scale at the 1st, 50th, and 99th percentile points. It has a range of 1 to 99, a mean of 50, and a standard deviation of 21.06. Scores for grades 3 through 12 in which the Portland Achievement Levels Tests were used are expressed in terms of RIT scores. These scores were derived from an equal interval, single-growth scale underlying the Portland tests. RIT scores are converted to NCEs and reported here also. These latter scores make it possible to compare and aggregate scores for use at the state and national levels. Interpretations of the results include comparisons of Chapter I students with non-Chapter I students in the District and with all District students where appropriate data were available. NCE scores make it possible to compare achievements with the national norming populations and with Chapter I students in the State.

3.a Public School Chapter I Students, Grades 1 and 2

Chapter I program objectives for Grades 1 and 2 are as follows:

Grade 1 Objective: Given special assistance, 50% of the project participants in reading in grade one will show a mean posttest score in reading equivalent to the expanded scale score at the 15th percentile (i.e., scale score of 214) as measured by the Comprehensive Test of Basic Skills, Primary Level B.

Grade 2 Objective: Given special assistance, project participants in the subject area of reading in grade 2 will display a normal curve equivalent (NCE) gain of four (4) as measured by the Comprehensive Test of Basic Skills, Primary Levels B or C.

The expected performance level for grade one students was determined by selecting the expanded scale score for the Comprehensive Test of Basic Skills (CTBS) at approximately the eligibility criteria for Chapter I students, i.e., the 15th percentile on CTBS Primary B. This performance level was chosen because Chapter I students in grades three through eight constitute approximately the lower 15 percent of the student population. The expanded scale score at the 15th percentile level is the expected performance level for grade one Chapter I students independent of which test level of CTBS (A or B) was administered. Teacher judgment was used to determine the test level administered to each student in Spring 1984.

Table 2 shows that of a total of 801 grade one students tested, 649 or 81.0 percent met or exceeded the expected scale score of 214. The stated program objective for grade one was met. The results also show that the achieved mean expanded scale score was 248 which is well above the expected scale score of 214, or at about the 37th percentile. The expected NCE was 28.2, and the achieved NCE was 43.0. Achievement information for individual schools is shown in Section 6.

An examination of the scores for individual schools show that where Primary Level A was used, the scores of students taking that test were very low, indicating they were quite properly selected for Chapter I services. Scores for two schools, however, were high enough to indicate that perhaps Primary B should have been used. On the other hand, as one might expect where subjective judgment is involved, the higher scores of students in some schools tend to indicate that, perhaps, some should not have been selected for Chapter I services. While it is unlikely that it was harmful to provide services to these students, schools should be cautious not to overlook more needy students or to dilute the services necessary for those who may need considerably more.

TABLE 2
COMPREHENSIVE TEST OF BASIC SKILLS*
SPRING 1984, CHAPTER I PUBLIC SCHOOLS, GRADE 1
POSTTEST SCORES**

	Primary A N=118	Primary B N=683	Total A/B N=801
Expected Expanded Scale Score	214.0	214.0	214.0
Achieved Expanded Scale Score	225.0	252.0	248.0
Expected Percentile	15.0	15.0	15.0
Achieved Percentile	21.0	40.5	37.0
Expected Normal Curve Equivalent	28.2	28.2	28.2
Achieved Normal Curve Equivalent	33.0	44.9	43.0

*CTBS, Form S, Levels A and B, 1974
**All out-of-level scores have been converted to in-level scores

Table 3 details the pretest and posttest means for 465 second grade Chapter I students in public schools who had matched Fall and Spring scores. Because these students were tested at their functional level, some were administered the CTBS Primary B while others took the Primary C test in the fall. Likewise, some were administered either Primary B or Primary C in the spring. The out-of-level scores were converted to in-level scores prior to their inclusion in this evaluation report. The results are expressed in mean expanded scale scores, percentiles, and normal curve equivalents (NCEs) for the three combinations of test administrations.

TABLE 3
COMPREHENSIVE TEST OF BASIC SKILLS*
CHAPTER I PUBLIC SCHOOLS, GRADE 2
PRETEST AND POSTTEST**

	N	Expanded Scale Score	Percentile	Normal Curve Equivalent (NCE)
Pretest Primary B	64	238	12.67	26.00
Posttest Primary B	64	290	28.00	37.70
Gain		52	15.33	11.70
Pretest Primary B	310	258	22.50	34.10
Posttest Primary C	310	303	35.00	41.90
Gain		45	12.50	7.80
Pretest Primary C	91	247	16.67	29.70
Posttest Primary C	91	317	44.50	47.10
Gain		70	27.83	17.40
Total Pretest	465	253	19.50	31.90
Total Posttest	465	304	36.00	42.50
Gain		51	16.50	10.60

*CTBS, Form S, Levels B and C
**All out-of-level scores have been converted to in-level scores

As indicated earlier, the program objective for the grade 2 reading program states that students will display a gain of four (4.00) NCEs from fall to spring. As shown in Table 3, the data demonstrate that the grade 2 reading objective has been met by the three groups of students. The first group, those who took Primary B at both pretest and posttest, gained 11.70 NCEs. The second group, those students who took Primary B at pretest and Primary C at posttest, gained 7.80 NCEs. The third group, who took Primary C for both pre and posttest, gained 17.40 NCEs. The average gain for all second grade Chapter I students in Portland was 10.60 NCEs indicating that the objective was met. Achievement information for individual schools is shown in Section 6 on State Achievement Information forms.

Table 4 displays the expected and achieved test scores for nonpublic schools, grade one Chapter I programs. Included are expanded scale scores, percentiles, and normal curve equivalents. All nonpublic school grade one students were administered Primary Level B of the CTBS.

TABLE 4
COMPREHENSIVE TEST OF BASIC SKILLS*
SPRING 1984, CHAPTER I NONPUBLIC SCHOOLS, GRADE 1
POSTTEST SCORES
N = 47

Expected Expanded Scale Score	214.0
Achieved Expanded Scale Score	267.0
Expected Percentile	28.2
Achieved Percentile	53.0
Expected Normal Curve Equivalent	15.0
Achieved Normal Curve Equivalent	51.6

*CTBS, Form S, Level B, 1974

The achieved scores are considerably higher than the expected scores. The scores, which are higher than those of the public schools, could reflect a difference in the population of students served at this grade level in public and nonpublic schools as well as program differences. Of the 47 first graders who were tested, all but one, or 98 percent, scored at or above the expected score of 214 indicating that the objective was met.

Table 5 shows the scores of the 42 second grade, Chapter I nonpublic school students who were administered either CTBS Primary B or Primary C as pretests in Fall 1983. Results for the two groups show that twenty-four students were administered Primary B as the pretest with Primary C as the posttest while eighteen students took Primary C as both pre and posttest.

Results are reported in mean expanded scale scores, percentiles, and normal curve equivalents. The achieved grade 2 gain of 9.30 NCEs substantiates that both groups individually and collectively met the program objective for Chapter I second graders.

TABLE 5
COMPREHENSIVE TEST OF BASIC SKILLS*
CHAPTER I NONPUBLIC SCHOOLS, GRADE 2
PRETEST AND POSTTEST MEANS**

	N	Expanded Scale Score	Percentile	Normal Curve Equivalent (NCE)
Pretest Primary B	24	272	31.50	39.90
Posttest Primary C	24	321	47.00	48.40
Gain		49	15.50	8.50
Pretest Primary C	18	269	30.00	39.00
Posttest Primary C	18	324	49.00	49.50
Gain		55	19.00	10.50
Total Pretest	42	271.0	31.00	39.50
Total Posttest	42	322.5	48.00	48.90
Total Grade 2 Gain		51.50	17.00	9.30

*CTBS, Form S, Levels B and C
**All out-of-level scores have been converted to in-level scores

3b. Public School Chapter I Students -- Grades 3 to 8 and 9 to 12

In the Portland Public Schools, the Portland Achievement Levels Tests (PALT) in reading, math, and language usage are administered District-wide in the fall and spring to all students in grades 3 through 8. At the high school level only Chapter I students are tested in fall and spring using the Multnomah County Editions of the PALT. The County Editions are also comprised of Rasch calibrated items and scores on these tests are comparable to the scores on other District PALT.

National norms are not established for the PALT. However, tables to convert RIT scores obtained from the tests to NCE for grades 3 through 8 were products of a study sponsored jointly by the Oregon Department of Education and the U.S. Office of Education[1]. The development of similar conversion tables for internal use with grades 9 through 12 was completed in Spring 1981 by the Evaluation Department of the Portland Public Schools. Results in terms of RIT and NCE scores have been reported for reading and math for all Chapter I students in grades 3 through 12 since 1981.

Tables of mean reading and math scores are shown first using RIT scores. Tables showing the RIT scores converted to NCE scores follow. In compiling the data, only scores matching fall and spring were included; therefore, the Ns are smaller than those reported as served by the project. Scores for non-Chapter I and for all grade 3 through 8 students (i.e., Chapter I plus non-Chapter I) in the District are also shown for comparison purposes.

The Fall and Spring mean RIT scores of Chapter I, non-Chapter I and Total District for reading and math are shown in Table 6. As expected, due to selection, the scores of Chapter I students are the lowest of the three groups. A common criterion used by schools besides teacher judgment for selecting Chapter I students is previous Spring RIT scores equal to P-scores of 43 or less. This score is about the 24th percentile, or an NCE of about 35. Fall scores of Chapter I students are at or below this level, indicating that those selected were lower performing students. Scores of grade 3 students are slightly above the criterion, perhaps reflecting the fact that other measures are used in selecting grade 3 students because District-wide testing does not include grade 2. (The P-score scale is a standard score scale based only on Portland District students. It has a mean of 50 and a standard deviation of 10.)

Achievement scores in Table 6 shows Chapter I students in all grades made larger gains than the Non-Chapter I and Total District students in reading and about equal gains across the grades in math. The gains in both reading and math were larger in 1983-84 than the average of previous years. Gains for the District as a whole were larger than in previous years. In 1983-84 the interval between Fall and Spring administrations of the achievement tests was a few weeks longer than in previous years; therefore, special publisher interpolated norms were used to adjust the scores to the appropriate norming dates. It is possible that the interpolated norms do not account for experiential differences, so the reader is cautioned about comparisons of gain scores for 1983-84 with those for other years.

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[1]Holmes, Susan E., ESEA Title I Linking Project, Final Report, Oregon Department of Education, January, 1980.

TABLE 6

FALL 1983 AND SPRING 1984 READING AND MATH SCORES (RIT MEAN)
FOR CHAPTER I, NON-CHAPTER I, AND TOTAL DISTRICT STUDENTS
GRADES 3 THROUGH 12*

		READING				MATH			
GRADE	GROUP	N	FALL	SPRING	GAIN	N	FALL	SPRING	GAIN
3	Chapter I	576	172.06	183.24	11.18	393	170.96	183.07	12.11
	Non-Chapter I	2306	192.43	200.11	7.68	2564	185.63	197.34	11.71
	Total District	2882	188.36	196.74	8.38	2957	183.68	195.44	11.76
4	Chapter I	518	179.47	188.47	9.00	429	182.48	192.21	9.73
	Non-Chapter I	2247	198.59	207.01	8.42	2352	198.47	208.23	9.76
	Total District	2765	195.01	203.54	8.53	2781	196.00	205.76	9.76
5	Chapter I	439	186.56	195.23	8.67	389	189.90	198.81	8.91
	Non-Chapter I	2431	205.05	212.49	7.44	2497	207.51	215.03	7.52
	Total District	2870	202.22	209.85	7.63	2886	205.14	212.84	7.70
6	Chapter I	328	190.25	197.96	7.71	340	194.04	202.68	8.64
	Non-Chapter I	2496	210.73	216.99	6.26	2519	213.57	221.95	8.38
	Total District	2824	208.35	214.78	6.43	2859	211.25	219.66	8.41
7	Chapter I	340	194.36	200.59	6.23	305	200.23	207.40	7.17
	Non-Chapter I	2755	216.23	221.36	5.13	2811	219.84	227.50	7.66
	Total District	3095	213.83	219.08	5.25	3116	217.92	225.53	7.61
8	Chapter I	299	199.64	206.73	7.09	320	205.48	211.39	5.91
	Non-Chapter I	3058	220.89	226.01	5.12	3028	225.98	233.50	7.52
	Total District	3357	219.00	224.29	5.29	3348	224.02	231.39	7.37
9	Chapter I	133	204.59	208.08	3.49	120	209.55	214.73	5.18
10	Chapter I	71	204.23	206.97	2.74	19	205.42	210.58	5.16
11	Chapter I	39	201.95	203.79	1.84	7	207.00	211.00	4.00
12	Chapter I	31	203.26	206.55	3.29	2	210.50	213.00	2.50

*No District-wide testing in Grades 9 through 12

TABLE 7
FALL 1983 AND SPRING 1984 READING AND MATH SCORES (NCE MEAN)
FOR CHAPTER I, NON-CHAPTER I, AND TOTAL DISTRICT STUDENTS
GRADES 3 THROUGH 12*

		READING				MATH			
GRADE	GROUP	N	FALL	SPRING	GAIN	N	FALL	SPRING	GAIN
3	Chapter I	576	37.04	37.29	0.25	393	35.60	35.40	-0.20
	Non-Chapter I	2306	60.89	58.32	-2.57	2564	62.27	54.98	-7.29
	Total District	2882	56.14	53.70	-2.44	2957	59.04	52.96	-6.08
4	Chapter I	518	28.13	37.29	9.16	429	25.96	35.09	9.13
	Non-Chapter I	2247	58.25	57.54	-0.71	2352	58.37	59.25	0.88
	Total District	2765	53.23	53.92	0.64	2781	53.79	54.56	0.77
5	Chapter I	439	29.30	37.94	8.64	389	23.45	34.31	10.86
	Non-Chapter I	2431	57.85	60.20	2.35	2497	58.64	58.27	-0.37
	Total District	2870	53.85	56.77	2.92	2886	54.72	54.90	0.18
6	Chapter I	328	24.98	34.90	9.92	340	12.20	29.85	17.65
	Non-Chapter I	2476	57.87	59.72	1.85	2519	57.34	60.24	2.90
	Total District	2824	54.27	56.55	2.28	2859	52.45	56.92	4.47
7	Chapter I	340	13.25	28.74	15.49	305	7.99	25.86	17.87
	Non-Chapter I	2755	59.65	60.75	1.10	2811	55.12	58.80	3.68
	Total District	3095	55.77	57.99	2.22	3116	52.30	56.02	3.72
8	Chapter I	299	9.67	28.10	18.43	320	9.91	24.58	14.67
	Non-Chapter I	3058	58.03	60.26	2.23	3028	55.96	60.40	4.42
	Total District	3357	54.89	57.97	3.08	3348	52.76	57.97	5.21
9	Chapter I	133	23.37	29.68	6.31	120	20.62	30.56	9.93
10	Chapter I	71	1.00	5.04	4.04	19	1.00	9.60	8.60
11	Chapter I	39	1.00	1.00	0.00	7	1.00	8.42	7.42
12	Chapter I	31	1.00	1.00	0.00	2	5.47	14.79	9.32

*No District-wide testing in Grades 9 through 12

Reading and math RIT scores in Table 6 were converted to the appropriate NCEs by using the publisher's norms. One set of norms was available to adjust the scores to the publisher's norming dates. The NCEs in Table 7 can be compared to those of previous years and to scores for national and state populations.

As expected, the Fall and Spring mean NCE scores of the Chapter I students in each grade are lower than those of the comparison groups in both reading and math. The gains of Chapter I students in all grades and in both subjects, however, are larger than those of the comparison groups and larger than zero. Like percentiles, a gain of zero would indicate that the students made gains comparable to the norming population; therefore, the positive gains for Chapter I and also District students are interpreted as being larger than those made by the norming group. Statewide NCE gains of Chapter I students in 1982-83 averaged 8.3 in reading and 9.2 in math. For grade 3 the gains of the District Chapter I students are, with one exception, all larger than the state averages of the previous year.

It should be noted that where the Fall NCE scores are numerically lower (e.g., 25 NCEs or less), the gains are larger than when the Fall scores are higher. The larger gains of Chapter I students in grades 6 through 8 may be related to the lower Fall scores. The fact that the Fall District Chapter I scores in grades 4 and 5 are more like the averages for the state tends to indicate that the gains for grades 6 to 8 are probably at least comparable to state averages.

It is interesting to note again this year that the NCE scores for Non-Chapter I and Total District are above 50.00, which is taken as the average of the national norming population. At the same time, the average gains are nearly all positive, again indicating an important gain by District students the last two years. Gains in previous years were mostly near zero or negative even though the Fall scores were as high as those of the last two years.

The results for grades 9 to 12 are difficult to interpret. There are fewer Chapter I students for whom there are scores in grades 10 to 12, especially in math, and they represent a disproportionate number of the lowest performing students. Scores for high school students District-wide are not available for comparison, and also RIT scores converted to NCE scores are not useful for interpreting gains in terms of national norms because the scores were too low. The fact that the scores for the high school students do not show the characteristic pattern of progressively higher scores beyond grade 9 indicates that only a small portion of the lowest performing students in the upper grades are accommodated in Chapter I programs.

RIT and NCE results both show gains for high school students that are noticeably smaller than those for students in grades 3 to 8. Statewide NCE gains of high school students for 1982-83 were smaller than those for grades 3 to 8 also. In general, the Fall NCE scores of the grade 9 students are much like those for grades 4 and 5 and much like those for the state population. Grade 9 gains are quite comparable to state averages and are considered satisfactory. Scores for students in grades 10 to 12 do not show corresponding gains.

The value of RIT scores over NCE scores in evaluating Chapter I hign school performances is apparent in grades 10 to 12. Table 7 shows that the mean RIT scores of these students were too low to be converted to meaningful NCE scores.

In the Portland Chapter I evaluation, low performing high school students are assigned test levels appropriate for their performances, and they may be assigned levels much lower than those appropriate for their grade levels. In using nationally standardized tests, it is generally accepted that tests which are only one level above or below the appropriate grade level may be used for out-of-level testing. The levels of PALT used in Portland high school Chapter I evaluation may exceed the accepted one grade level standard.

Overall, the achievements of the public school Chapter I students for 1983-84 appear satisfactory when compared to available data. The gains this past year were equal to, or larger than, gains made in previous years and equal to, or larger than, the gains of comparison groups locally, statewide, and nationally.

3.c Nonpublic School Chapter I Students -- Grades 4 to 8

Portland Achievement Levels Tests, Multnomah County Edition, in reading and math were all administered in Spring 1983 and again in Spring 1984 to students in the District's Chapter I nonpublic schools. Results are reported for students in grades 4 through 8 with Spring 1983 scores obtained when the students were in grades 3 through 7. In interpreting the results, some comparisons are made with results for public schools, so the reader is reminded that the pretest for nonpublic school students was spring of the previous year. Some comparisons are made on a Spring-to-Spring basis where the gains of the public school students are not obtained from entirely match scores, so the reader is cautioned of this slight discrepancy.

Reading and math results expressed in terms of RIT scores are shown in Table 8. Spring 1983, or pretest scores, are much lower than the Spring scores of public school students in the same, corresponding grades, so the students appear to be selected appropriately for Chapter I services. District-wide results for public school students over the years generally show Spring-to-Spring gain in reading of about 8 to 9 RIT points for grades 4; 6 to 7 for grades 5 and 6; and about 5 for grades 7 and 8. The gains of the nonpublic school Chapter I students are slightly larger so the reading achievements appear to be satisfactory.

In reading District-wide results of public school students for past years generally show Spring-to-Spring RIT gains of about 10 to 11 for grade 4; 8 to 9 for grade 5; 6 to 7.5 for grades 6 and 7; and about 6.0 for grade 8. Again, the gains of the nonpublic school Chapter I students were larger, so the achievements appear satisfactory.

Table 9 shows the RIT scores converted to NCE scores. The pretest, or Spring 1983, scores are noticeably higher than the expected scores of public school Chapter I students, a much greater difference than in previous years. The gains for both reading and math were all positive, indicating that these Chapter I students made larger gains than those established by the norming population. Compared to state averages for schools testing Spring to Spring, the gains of the nonpublic Chapter I students tended to be slightly lower in reading but about equal or better in math. Considering the fact that the scores are quite high for both Spring 1983 and Spring 1984, the gains for the 1983-84 school year are quite satisfactory.

TABLE 8
SPRING READING AND MATH SCORES (RIT) FOR NONPUBLIC SCHOOL
CHAPTER I STUDENTS -- GRADES 4 THROUGH 8

	Reading				Math			
Grade	N	1983	1984	Gain	N	1983	1984	Gain
4	18	190.56	194.56	14.00	9	180.11	196.56	16.45
5	21	185.81	194.71	8.90	10	191.80	201.80	10.00
6	16	192.56	201.38	8.82	12	195.83	209.08	13.25
7	10	201.90	207.20	5.30	11	203.55	211.27	7.72
8	7	202.57	212.14	9.57	8	206.50	216.00	9.50

TABLE 9
SPRING READING AND MATH SCORES (NCE) FOR NONPUBLIC SCHOOL
CHAPTER I STUDENTS -- GRADES 4 THROUGH 8

	Reading				Math			
Grade	N	1983	1984	Gain	N	1983	1984	Gain
4	18	36.58	45.74	9.16	9	34.22	43.00	8.78
5	21	35.33	38.20	2.87	10	35.91	39.98	4.07
6	16	35.93	39.91	3.98	12	30.80	40.97	10.17
7	10	40.71	42.53	1.82	11	32.15	35.67	3.52
8	7	33.71	39.56	5.85	8	25.18	35.15	9.97

4. FINDINGS IN SPECIAL CHAPTER I STUDIES

In the attempt to evaluate the effects -- including sustained gains -- of Chapter I more clearly, scores of students enrolled for three successive years were analyzed according to their enrollment and non-enrollment in Chapter I during the three years. The results of this longitudinal study showed quite clearly that the amount of gain for any given year depended not only on ability level but on the students' previous history in Chapter I. The same appeared to be true for sustained gains. A most significant finding here was a methodological one in which the evidence showed that consideration must be given to the previous history of students in supplementary instruction in designing sustained gains studies.

A second finding in the longitudinal study was that students enrolled in Chapter I following at least one year of not being enrolled in Chapter I tended to make rather dramatic gains the first year of their treatment. Conversely, gains of students not enrolled in Chapter I the year following their enrollment were less than during their enrollment in the program.

A third finding was that students enrolled in Chapter I for at least two consecutive years sustained their gains quite well for at least their first year without Chapter I. This finding led to the recommendation that consideration be given to previous history in selecting students for enrollment in Chapter I, e.g., students with relatively high scores may be selected for Chapter I in order for them to sustain their gains.

Two studies of exemplary programs being implemented in Portland Chapter I schools were conducted: HOSTS and Prescription Learning. Separate evaluation reports for these have been prepared. A general finding was that as groups, the achievements of students in each of the exemplary programs and in the other Chapter I programs as well tended to make slightly larger gains than the average of the District. In terms of achievement test scores, neither of the exemplary programs stood out as being appreciably better at producing gains than the more traditional Chapter I programs originating in the District.

A second finding in the studies of exemplary programs was that the gains of individual schools varied considerably regardless of the nature of their programs. Gains by grade levels also varied adding to the complexity in assigning causal relationships. In other words, larger or smaller gains were not associated with a particular educational program as these programs were identified here. It now appears that a more productive strategy for evaluating Chapter I is to examine various qualitative aspects of student experiences both in and out of Chapter I. This conclusion was reached after a special study of school differences in Chapter I performances was completed.

Table 10 presents a rank ordering of District Chapter I schools (excluding high schools) along each school's mean achievement gain during 1983-84 for Chapter I students in grades 3-8. Achievement gain was measured as GROW, the gain from fall to spring measured as the deviation from the District average gain from fall to spring. GROW is interpreted as follows, where significance means statistical significance at the .05 level:

	GROW Value	Interpretation
Less than average District growth (Fall to Spring)	-2.0 and below	Negative, significant
	-2.0 to -1.7	Negative, approaching significance
	-1.6 to -0.7	Negative, nonsignificant
	-0.7 to 0.7	Average District growth
Greater than average District growth (Fall to Spring)	0.7 to 1.6	Positive, nonsignificant
	1.7 to 2.0	Positive, approaching significance
	2.0 and above	Positive, significant

Schools showed a wide range of Chapter I achievement growth, from a school GROW value as high as 4.1 in reading to one as low as -1.5 in math. Remember that GROW measures deviation from the District average growth and not absolute gain from fall to spring; a negative value means less growth than the District average and a positive value greater growth. The school rankings in Table 10 should be interpreted with caution, giving consideration to the grades served by each school. Whether the school serves the lower grades, all grades or the upper grades has some importance in itself on the overall Chapter I school performance.

Table 10 also lists the nature of each school's program, whether it used available commercial systems (Prescription Learning or HOSTS) or whether it was a "garden variety" approach developed from a variety of materials. For reading, Prescription Learning, HOSTS, and garden variety programs were all well dispersed throughout the ranked list; no single approach dominated among the high-performing or the low-performing schools. For math, Prescription Learning was more concentrated near the top of the list, although a few such programs appeared near the bottom. HOSTS was not used for Chapter I math in 1983-84. To sum up, schools differ greatly in their degree of achievement gain, variation which is not simply explained by the general nature of the program. Why are Prescription Learning and HOSTS associated with large reading gains in some schools and small gains in others? Obviously, one can point to diversity in school conditions and school target populations as providing at least part of the answer. We believe, however, that also of importance are program conditions and practices related to the teaching of basic skills which can exist independently of any particular commercial or non-commercial system.

TABLE 10
RANK ORDER OF CHAPTER I SCHOOLS ON READING AND MATH ACHIEVEMENT AND THE NATURE OF THEIR PROGRAM

RANK	GRADES	READING GROW	PROGRAMS*	RANK	GRADES	MATH GROW	PROGRAMS*
1.	K-4	4.11	PL	1.	K-4	3.61	PL
2.5.	K-5	2.80	HO	2.	K-5	3.16	GV
2.5.	K-8	2.80	PL	3.	5-8	3.09	GV
4.	P-5	2.73	GV	4.	K-8	2.99	PL
5.	5-8	2.66	GV	5.	K-8	2.53	PL
6.	K-5	2.55	HO	6.	K-5	2.38	PL
7.	K-5	2.32	HO	7.	P-5	2.33	GV
8.	K-8	1.78	PL	8.	K-5	2.14	GV
9.	K-5	1.59	PL	9.	K-6	2.10	PL
10.	K-5	1.54	GV	10.	K-8	1.99	GV
11.	K-8	1.45	HO	11.	P-5	1.96	GV
12.	K-8	1.33	HO	12.	K-5	1.92	GV
13.	6-8	1.22	GV	13.	K-8	1.91	GV
14.	K-5	1.14	PL	14.	K-8	1.82	GV
15.	K-5	1.12	GV	15.	K-8	1.80	PL
16.	K-5	1.11	GV	16.	5-8	1.48	GV
17.	P-5	0.96	HO	17.	K-8	1.42	GV
18.	K-8	0.83	HO	18.	K-8	1.32	GV
19.	P-5	0.80	HO	19.	K-5	1.30	GV
20.	K-8	0.72	HO	20.	6-8	1.23	PL
21.	K-5	0.59	GV	21.	6-8	1.20	PL
22.	K-5	0.[illegible]	HO	22.	K-5	1.19	GV
23.	K-6	0.56	HO	23.	6-8	1.10	GV
24.	P-5	0.52	GV	24.	K-5	0.96	GV
25.5	K-5	0.47	GV	25.5	K-5	0.95	GV
25.5	6-8	0.47	GV	25.5	K-5	0.95	GV
27.5	K-8	0.40	PL,HO	27.	K-4	0.88	GV
27.5	5-8	0.40	PL	28.	K-8	0.86	GV
29.	K-5	0.39	HO	29.	K-8	0.83	PL
30.	K-8	0.37	HO	30.	K-4	0.69	GV
31.	K-5	0.34	HO	31.	P-5	0.64	GV
32.	K-8	0.26	HO	32.	P-5	0.59	PL
33.	K-5	0.20	GV	33.	K-8	0.46	GV
34.	K-5	0.15	GV	34.	6-8	0.41	GV
35.	K-4	0.13	GV	35.	K-5	0.23	GV
36.	K-4	0.08	HO	36.	K-5	0.21	GV
37.	5-8	0.08	GV	37.	K-5	0.06	GV
38.	1-5	0.01	HO	38.	5-8	-0.04	PL
39.5	K-5	-0.31	GV	39.5	K-5	-0.27	GV
39.5	K-4	-0.31	HO	39.5	K-5	-0.27	GV
41.	6-8	-0.36	PL	41.	P-5	-0.54	PL
42.	K-5	-0.39	GV	42.	6-8	-0.56	GV
43.	6-8	-0.47	GV	43.	P-5	-0.61	GV
44.	K-8	-0.65	GV	44.	1-5	-0.79	GV
45.	6-8	-0.72	PL	45.	K-4	-0.95	GV
46.	P-5	-0.74	PL,HO	46.	K-5	-0.96	GV
47.	P-5	-0.81	PL	47.	P-5	-1.49	GV
48.	6-8	-0.96	PL				
49.	P-5	-1.00	PL,HO				

* PL - Prescriptive Learning
HO - HOSTS
GV - Garden Variety

(Two schools did not have Chapter I Math Program)

Using the information contained in Figure 1, it was possible to examine the relationship of various program characteristics to achievement outcomes. Tables 11 and 12 present comparisons for reading and math, respectively, along a number of program variables related to the system used, coordination between Chapter I and regular instruction, the use of computers, and teaching arrangement. The unit of analysis here was the individual Chapter I school program. In reading, only small differences were found for the various comparisons. As in Table 10, it is apparent from Table 11 that schools' use of Prescription Learning or HOSTS in and of itself made little difference in school achievement gains. Overall, those using a commercial system fared no better than the home grown programs. Looking at variables 3-5, the differences between schools who said they coordinate with the regular classroom and instructional goals and those who said they did not were small, or practically non-existent. Note that most teachers said they do coordinate with the regular classroom teacher. What this means, however, is unclear, whether it includes formal or informal coordination, in some grades or all grades, weekly or once a year, etc. Regarding the use of computers for instruction or management, there were minor differences between computer users and non-users which were dissimilar for the lower and upper grades. Finally, variables 8 and 9 refer to the general instructional arrangement. Most schools used the pull-out or laboratory method exclusively over in-class instruction or a combination of the two. There were no dramatic or consistent differences across the three instructional settings.

The like results for math (Table 12) show that there was a tendency for Prescription Learning schools to fare better than the other Chapter I schools. Variables 2-4 involving coordination showed results similar to reading. The use of computers showed little difference in the lower grades and a small difference in the upper grades in which the handful of schools without computers did better. The instructional arrangement also yielded different patterns for grades 3-5 and grades 6-8, patterns which were not readily explainable.

Another set of school and program characteristics are shown in Table 13 where each was correlated with the mean school achievement gain for Chapter I students. The first two variables are concerned with some very general school characteristics: size and stability. Consistent with what was speculated, school size was negatively correlated with reading achievement gain, albeit a weak relationship. This negative correlation means that larger reading achievement was associated with the smaller schools. For math the correlation was practically zero. It was speculated that the smaller schools may be able to attend more comprehensively and consistently to individual student needs. Students in larger buildings, being more anonymous, may not always receive specialized help when they need it. This is offered as one possible explanation for the reading correlation. Contrary to our speculations were negative correlations between school stability and reading and math achievement. Again, this association was weak but its direction quite unexpected, indicating larger achievement gains among schools with relatively unstable student populations. One possible explanation is that students in less stable schools have lower fall pre-scores (which turned out to be the case) and, thus, have a likelihood for larger fall-to-spring gain. When the pre-scores were controlled for, the relationship between achievement growth and stability was reduced for reading (partial correlation = -0.06) and remained virtually unchanged for math (partial correlation = -0.21).

TABLE 11
CHAPTER I SCHOOL ACHIEVEMENT GAINS FOR
VARIOUS PROGRAM TYPES AND PRACTICES
READING

TYPE OF PROGRAM OR PRACTICE		SCHOOL ACHIEVEMENT GAINS FOR CHAPTER I STUDENTS: READING GROW 1983-84 N	MEAN	STANDARD DEVIATION	t OR F
1. Prescription Learning Reading	YES	13	0.59	1.62	0.36
	NO	36	0.76	0.93	
2. HOSTS Reading	YES	21	0.70	0.98	0.06
	NO	28	0.72	1.26	
3. Reading Program Correlated with Regular Class Instruction	YES	42	0.78	1.17	-1.06
	NO	7	0.29	0.79	
4. Reading Program Uses PALT Goal Reports for Instructional Planning	YES	36	0.78	1.17	-0.74
	NO	13	0.51	1.03	
5. Reading Teacher Confers with Regular Classroom Teacher about Student Progress	YES	44	0.70	1.09	-0.03
	NO	2	0.68	2.32	
6. Computers Used in Grades 3-5 for Reading Instruction or Management	YES	29	0.93	1.19	-1.25
	NO	13	0.47	0.87	
7. Computers Used in Grades 6-8 for Reading Instruction or Management	YES	14	0.51	1.05	0.61
	NO	6	0.83	1.09	
8. Teaching Method Reading Grades 3-5	IN-CLASS ONLY	7	0.52	1.04	0.44
	PULL-OUT/LAB ONLY	34	0.91	1.17	
	COMBINATION	2	0.49	0.67	
9. Teaching Method Reading Grades 6-8	IN-CLASS ONLY	6	0.83	1.09	0.18
	PULL-OUT/LAB ONLY	11	0.53	1.11	
	COMBINATION	3	0.45	0.96	

TABLE 12
CHAPTER I SCHOOL ACHIEVEMENT GAINS FOR
VARIOUS PROGRAM TYPES AND PRACTICES
MATH

TYPE OF PROGRAM OR PRACTICE		SCHOOL ACHIEVEMENT GAINS FOR CHAPTER I STUDENTS: MATH GROW 1983-84 N	MEAN	STANDARD DEVIATION	t OR F
1. Prescription Learning Math	YES	12	1.56	1.24	-1.83*
	NO	35	0.84	1.14	
2. Math Program Correlated with Regular Class Instruction	YES	42	1.08	1.24	-0.69
	NO	4	0.65	0.65	
3. Math Program Uses PALT Goal Reports for Instructional Planning	YES	33	1.14	1.29	-0.83
	NO	13	0.81	0.98	
4. Math Teacher Confers with Regular Classroom Teacher about Student Progress	YES	44	1.04	1.23	0.04
	NO	2	1.08	0.18	
5. Computers Used in Grades 3-5 for Math Instruction or Management	YES	25	1.06	1.19	-0.03
	NO	13	1.04	1.51	
6. Computers Used in Grades 6-8 for Math Instruction or Management	YES	13	1.23	0.97	1.09
	NO	7	1.71	0.86	
7. Teaching Method Math Grades 3-5	IN-CLASS ONLY	7	0.58	1.64	1.86
	PULL-OUT/LAB ONLY	30	1.26	1.16	
	COMBINATION	2	-0.17	0.88	
8. Teaching Method Math Grades 6-8	IN-CLASS ONLY	5	1.61	1.03	1.44
	PULL-OUT/LAB ONLY	11	1.38	0.69	
	COMBINATION	3	0.57	1.19	

* p 0.10

Variables 3-10 in Table 13 are concerned with the Chapter I target population, resources, the type of instructional personnel, and the amount of Chapter I instruction provided to students. These correlations were small to nil with two exceptions which were statistically significant but still indicated a weak degree of association. The first (variable 6) indicated higher reading gain associated with a larger proportion of the Chapter I budget spent on teachers over aides. The second (variable 9) showed higher math gains associated with more instructional minutes in grades 3-5. Overall, the findings for instructional minutes failed to show a consistent pattern contrary to our speculation of a positive and moderate degree of association. The actual number of instructional minutes may not be a critical factor. What could be more important is how students spend those minutes, that is time-on-task. All in all, the program characteristics presented in Tables 2-4 failed to show any substantial degree of association with Chapter I achievement.

Findings from the special studies tend to emphasize the complex nature of student learning, and to continue to focus almost exclusively on the Chapter I treatment as the major determiner of outcomes seems fruitless. The plan now is to examine relationships between treatments and in contexts which can be defined and classified. While the plan appears ambitious, there seems to be no other way.

TABLE 13
CORRELATIONS (Pearson's r) BETWEEN CHAPTER I SCHOOL/PROGRAM CHARACTERISTICS AND ACHIEVEMENT GAINS (N = 49 SCHOOLS)

SCHOOL OR PROGRAM CHARACTERISTIC	SCHOOL ACHIEVEMENT GAINS FOR CHAPTER I STUDENTS	
	READING GROW 1983-84	MATH GROW 1983-84
1. Total Students in School	-0.25**	-0.05
2. School Stability Index (a)	-0.13	-0.23*
3. Percent Total Students in Chapter I Reading	-0.06	---
4. Percent Total Students in Chapter I Math	---	-0.04
5. Chapter I Capacity Index(b)	0.08	0.01
6. Percent Chapter I Budget Spent on Teachers vs. Aides	0.21*	-0.02
7. Reading Instructional Minutes per Week: Grades 3-5	0.03	---
8. Reading Instructional Minutes per Week: Grades 6-8	0.19	---
9. Math Instructional Minutes per Week: Grades 3-5	---	0.22*
10. Math Instructional Minutes per Week: Grades 6-8	---	0.18

(a) Percent of students enrolling at the beginning of the year who are still enrolled at the same school in June

(b) Students receiving Chapter I divided by capacity (capacity = total budget/$360)

* p 0.10
** p 0.05

5. SUMMARY AND COMMENTS

During the 1983-84 school year, Portland Chapter I schools implemented three kinds of programs for Chapter I students: HOSTS, Prescription Learning, and Garden Variety individual school-developed programs. Summative evaluation of the Portland project showed satisfactory progress of the students overall in reading and math during the school year regardless of the particular program in which they were enrolled. Group differences in achievement among the three instructional programs were not sufficiently distinct to merit an endorsement of one program over another. In fact, the variation of achievement across the programs was sufficient to postulate that conditions other than those associated with the more observable, unique qualities of the instructional program, e.g., use of tutors, multimedia, or text, might be more worthy of study.

The fact that instructional programs that appeared widely different in nature each tended to produce good results in some schools and much less satisfactory results in others quite clearly indicates either that the particular instructional program will not work the same in all school circumstances, or that the program was not implemented consistently in all schools. The problem is that the most salient features of these programs have not been carefully explicated to assure consistent implementation and facilitate proper evaluation.

It is postulated that there are a limited number of critical elements or variables in educational programs which account for most student achievement. The extent of the effect is related to the extent the element or variable is present in the students' learning environment. A constraint imposed on the investigation is that the element or variable lies under the control of the school or teacher. This is the premise on which significant evaluation effort is based for the 1984-85 school year.

6. INDIVIDUAL SCHOOL DATA FOR GRADE 1 AND STATE CHAPTER 1 REPORTING FORMS

(This section of the report is optional, and may be deleted for some distribution. It consists of tables of individual school results for Grade 1 Chapter I students and State Chapter I reporting forms. State forms include one for reporting achievements for individual schools. The results presented earlier in Section 3 are compilations made from individual school data in Section 6.)